toxins. The results obtained are reported as being very striking, in that not only were the attacks aborted, but the action on the fever itself was striking and immediate, chills, vomiting, and malaise disappearing rapidly. The remedies were employed in the following strength: Tincture of iodine and potassium iodide, of each, 1; distilled water, 25. A teaspoonful in a little water at the beginning of an attack; a second teaspoonful fifteen or twenty minutes later, if required. In those patients in whom vomiting is a prominent symptom fifteen minims of ether may be added to the first dose. The use of Lugol's solution in chronic malaria is old, but this remedy has rarely been used in the attacks. It should be borne in mind that there is a chemical antagonism between iodine and quinine, and that when both are used enough time should elapse to permit of the elimination of either.—*Revue de Médecine*, 1901, vol. xxi., p. 804.

Antidotes for Cyanide Poisoning.—DRS. C. J. MARTIN and R. A. O'BRIEN, of Melbourne, commenting on the fact that cyanide poisoning had become not infrequent among the Australian miners since the introduction of the use of the cyanides in the extraction of gold, present a careful series of studies to determine, if possible, a practical course to pursue in the treatment of this condition. Hydrogen dioxide and the salts of cobalt have of late years been extolled, Kobert writing at great length of the value of the former antidote. Shoüil first pointed out the desirability of forming insoluble cobalt cyanide. Ferrous hydrate has had much vogue in hereditary text-book writings. These investigators have studied these three agents in particular. Pure chemicals were employed, and rabbits were used in the animal experiments. In these animals 1 to 100,000 of potassium cyanide produced, within seven minutes, staggering gait, very rapid respirations, followed shortly by labored breathing; convulsions of varying intensity always occurred, and at times appeared within three minutes after the introduction of the drug. Exhaustion followed the spasms. Respiration then consisted of heaving movements of the chest and abdomen. The breathing became shallower and shallower, and the animals died. If the animal did not die within thirty minutes it usually survived. Hydrogen dioxide as recommended, subcutaneously in 3 per cent. solution and by the stomach in 2 per cent. solutions, was employed. When introduced subcutaneously it was immediately broken up, and its effects were *nil*—the animals all died; a similar result was obtained by its use by the stomach, even when the poison and its supposed antidote were introduced mixed. The authors say that hydrogen dioxide does oxidize cyanides, but such action is too slow to be of therapeutic value, and they detail a series of experiments to determine the velocity of this reaction ($2\ HCN + H_2O_2 = C_2O_2N_2H_4$). This interaction requires from twenty to seventy minutes, and any antidote for potassium cyanide must act instantaneously. Cobalt chloride was then studied in the same careful manner. Twenty-six experiments pointed to the fact that the cobalt chloride was capable of forming an insoluble cyanide, but that it must be given in excess; the acid of the gastric juice does not interfere with the reaction. Cobalt chloride itself, however, as pointed out by Stuart, is not free from poisonous action, producing severe gastro-enteric symptoms. This should be carefully guarded. Ferrous hydrate when added to a cyanide salt forms a ferrocyanide almost instantaneously. Such ferrocyanides are but slightly poisonous, and its administration would seem to be even better than the cobalt salts, in view of their toxic action; but, unfortunately, the strongly acid character of the stomach contents greatly hinders this action, hence alkalies must be added to neutralize the free hydrochloric acid. The author's summary of results shows that there is no known physiological antidote for cyanide poisoning. Hydrogen dioxide is practically worthless, given in any form; cobalt salts are valuable, but are poisonous; ferrous salts administered with sufficient alkali are as efficacious as cobalt salts. At the body temperature the formation of ferrocyanides is instantaneous, but they possess two disadvantages: (1) They are kept in solution with difficulty, and (2) there is an absolute necessity of using enough alkali. This is best effected by the use of doses of magnesium oxide. In all mines where such processes are employed there should be kept solutions of ferrous sulphate, weak potash, and a small packet of magnesium oxide, together with a stomach-tube and a suitable receptacle for mixing, so that the remedies could be administered without delay, as time is the most important factor. They recommend an ounce of a 23 per cent. solution of ferrous sulphate; one ounce of a 5 per cent. solution of caustic potash; thirty grains of powdered magnesium oxide; a metal receptacle of one pint capacity; stomach tube. The first two solutions should be kept in air-tight tubes which can be broken into the receptacle, and powdered magnesia and half a pint of water added, shaken up, and administered. This amount of antidote will take care of seventy-five grains of potassium cyanide.—*Intercolonial Medical Journal of Australasia*, 1901, vol. vi., p. 245.

Malarial Parasites and Methylene Blue.—DR. A. IWANOFF administers methylene blue in three daily doses of 5 grains each to patients in whose blood tertian parasites have been found. The first changes observed began at the end of the second day, and affected only the full-grown forms; the smaller, younger forms remain unchanged. The adult organism showed diminished movements and a breaking up of the protoplasm into lumpy-like bodies, which are rounded and lie on the blood cell apart from one another, or are connected with each other by minute bands of protoplasm and pigment granules. The protoplasm of these lumps is shrunken. The nucleus of the parasite is found generally near the peripheral portion of the blood-cell, and shows in its carmine-violet stained chromatin that it consists of numerous granules. Among the sporulation forms he found, beside normal sporozoites, others which were not fully formed. Some show their protoplasm very distinctly, while others appear to have no plasma at all. The pigment is gathered in patches, and these are irregularly distributed. The chief points he noted in the action of methylene blue on the tertian forms are destruction of the protoplasm and absence of alteration of the chromatin. In the parasite of æstivo-autumnal fever no changes were observed. In the crescent forms there was shrinking and granulation of the protoplasm. He noticed a more equal staining of the whole parasite than in the normal. The pigment granules appear coarser and are grouped in an irregular mass, which projects from the surface of the shrunken protoplasm. The destructive process of the protoplasm of malarial crescents goes on until there is noth-